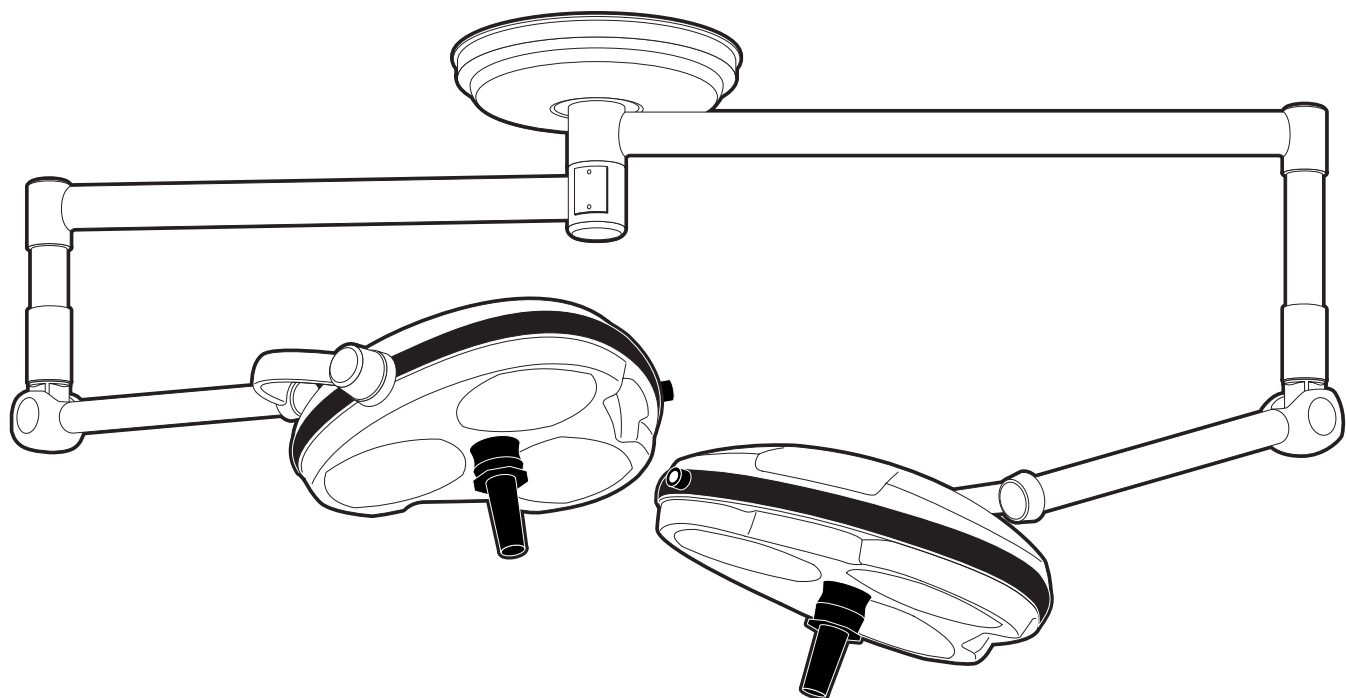




## ***INSTALLATION INSTRUCTIONS***



# ***ST19***

## ***SERIES SURGICAL LIGHTS***



---

## EQUIPMENT LABELS AND SPECIFICATIONS

---



ATTENTION, CONSULT MANUAL FOR FURTHER INSTRUCTIONS.  
INDICATES SPECIAL USER ATTENTION.



AC VOLTAGE



FUSE TYPE 3 AMP, SLOW BLOW TYPE



CLASS I DEFIBRILLATION PROOF, TYPE B EQUIPMENT- IPX4 RATED.  
INTERNALLY POWERED EQUIPMENT

FOR DRY LOCATIONS

UNIT TO BE USED ONLY IN SPECIFIED ENVIRONMENTAL CONDITIONS

TEMPERATURE: 15° - 30° C (60° -85° F)

HUMIDITY: 30% - 60% RELATIVE HUMIDITY, NON CONDENSING

**ENTECLA CERTIFIED**  
TO UL2601-1  
CAN/CSA601.1, IEC 60601-2-46

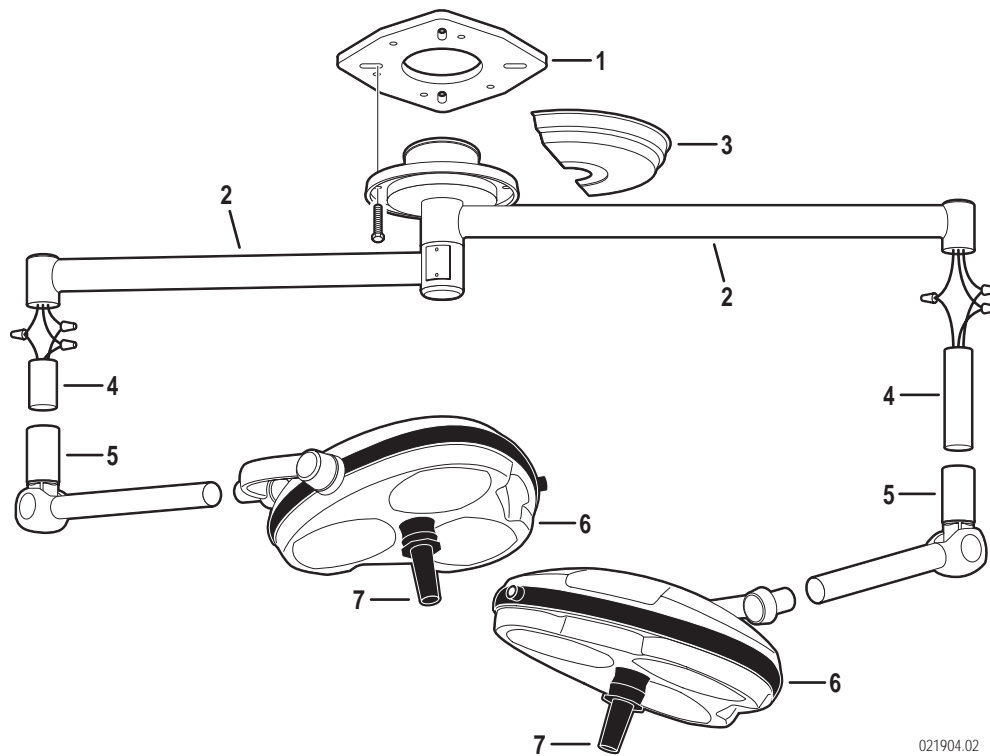


### TOOLS REQUIRED:

3/8" DRIVE RATCHET  
ALLEN WRENCH SET-METRIC  
(2) STEP LADDERS  
3/4" DEEP SOCKET, 3/8" DRIVE  
#2 PHILLIPS HEAD SCREW DRIVER  
UTILITY KNIFE  
WIRE CUTTERS

CRIMP PLIERS  
DIGITAL LEVEL  
TRUE RMS MULTIMETER  
PORTABLE LIFT, 750LB. CAPACITY  
12" ADJUSTABLE WRENCH  
SLOTTED HEAD SCREWDRIVER 1/4"  
PUNCHSET 1/8" - 3/8"





021904.02

### TYPICAL INSTALLATION SEQUENCE / COMPONENT IDENTIFICATION

- |                               |                                    |
|-------------------------------|------------------------------------|
| 1. Mounting Plate             | 5. Balance Mechanism(BOM)          |
| 2. Radial Arm Assembly(RAA)   | 6. Lighthead                       |
| 3. Ceiling Cover              | 7. Sterilizable Positioning Handle |
| 4. Vertical Support Tube(VST) |                                    |

### INSTALLATION NOTES

•The SKYTRON Surgical Lighting Fixture is normally shipped in two to three crates, depending on the model. A carton containing the Vertical Support Tubes, miscellaneous hardware, and various instructional materials is packed separately.

•Follow the Installation Instructions and utilize the Installation Check List to assure proper installation.

•Additional materials required for proper installation include Blue Loc-Tite compound.

•Special adapter plates for mounting SKYTRON surgical lights on existing mounting structures are available. Contact your SKYTRON representative for special application details.

•Contact SKYTRON representative for Seismic calculations if applicable.

## **IMPORTANT NOTES**

### **UNCRATING**

- Should any damage to the fixture be noted while uncrating, further unpacking should be stopped and the container with all the wrappings held for inspection. The transportation company should be notified immediately so an inspector can be sent. Consult the Damaged Shipment Claim Procedure sheet for further details.
- Personnel uncrating SKYTRON surgical lights should be aware that they are delicate medical equipment and special care in handling should prevail throughout installation.
- Use extreme caution when removing the contents from the crates to prevent damage to the lights. Leave the lightheads in their crates until ready to install.
- If the lighthead must be set down after it is removed from the crate, always lay it on the front face on the foam shipping block. Do not lay it on the front face.

### **UNCRATING PROCEDURE**

Open the top of the lighthead box and remove the packing material, remove the sterilizable positioning handle and remove lighthead from the crate.

#### **NOTE**

Details may vary depending upon model and support structure fabrication.

ALL fixtures use METRIC fasteners.

### **INSTALLATION PROCEDURE**

The lighting fixture should be installed in the following sequence:

1. Mounting Plate
2. Radial Arm Assembly and Ceiling Cover
3. Vertical Support Tubes/ Balance Mechanisms
4. Lightheads

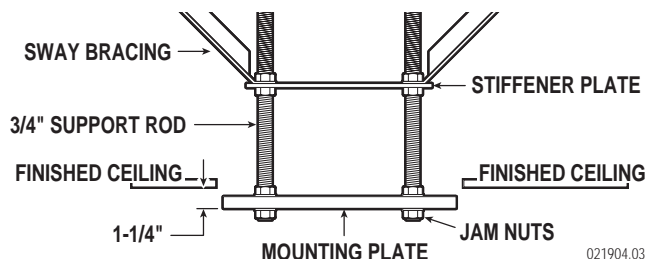
### **1. Mounting Plate**

a. Check the strength and stability of the mounting structure. It should be fabricated of steel and welded or bolted to the structural ceiling. It should be braced in a manner that will allow no twisting or lateral motion. A steel stiffener plate should be used to connect the 3/4" diameter "all-thread" support rods and to provide an attachment base for the angle-iron sway bracing. The 3/4" diameter support rods should be mounted in a 9-1/2" square pattern and should extend 2-1/4" below the finished ceiling. **See Mounting Structure details in the back of this booklet.**

b. Install the SKYTRON mounting plate on the threaded rods between jam nuts. The plate should normally be located 1-1/4" off the finished ceiling (measured from the bottom of the plate) and accurately leveled, within 0.1 degree, using a digital level. Tighten the jam nuts securely. See figure 1.



The mounting plate must be accurately leveled to prevent lighthead drift.



021904.03

**Figure 1. Mounting Plate Installation**

**Consult specific Seismic calculations if applicable.**

#### **NOTE**

On recessed mounts, extended mounts, or adapter situations, the mounting plate will NOT be placed 1-1/4" off the finished ceiling. A special drawing will be included in the installation package to cover these applications.

## 2. Radial Arm Assembly and Ceiling Cover

### NOTE

- The multiple arm assemblies are easier to handle during installation if the arms are left taped and tied together.
- In some cases it may be necessary to connect the electrical wires to the radial arm junction box before the arm assembly can be bolted to the mounting plate.

a. Install the Radial Arm Assembly(RAA) onto the mounting plate using the bolts provided. Tighten the mounting bolts securely.



### CAUTION



TO AVOID BLOWING FUSES, DO NOT TURN MAIN POWER TO FIXTURE "ON" UNTIL ALL LIGHTHEADS ARE INSTALLED AND ALL WIRING CONNECTIONS ARE COMPLETED.

b. Observe color codes and connect the transformer wires to a 120VAC, 60Hz power supply using a DPST wall switch

### NOTE

Connection of the fixture wires using Crimp Connectors is recommended .

c. Install the ceiling cover and secure. See figure 2.

## 3. Vertical Support Tubes/Balance Mechanism

### NOTE

Determine correct placement for each Balance Mechanism(BOM)/Vertical Support Tube(VST) on the radial arm assembly. The longest VST goes into the top radial arm.



### WARNING



Apply Loc-Tite to all of the 5mm mounting screws and use a 3mm allen wrench to tighten the screws.

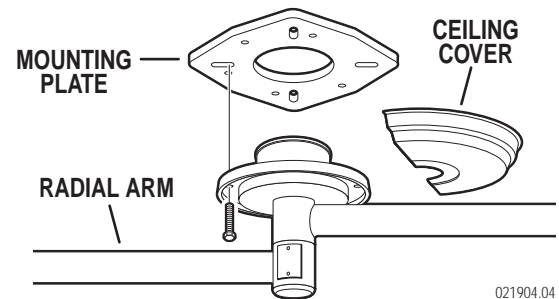


Figure 2. Radial Arm Installation

a. Install the VST on the BOM, apply Loc-Tite to screw threads and secure VST with the allen screws provided. See figure 3.

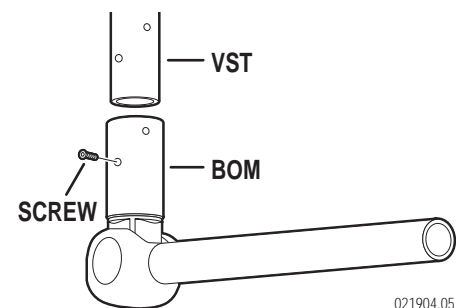
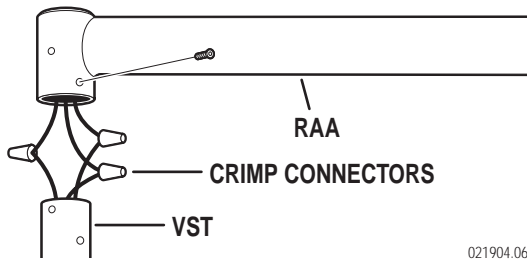


Figure 3. Balance Mechanism

b. Observe the wire colors and connect the wires from the radial arm to the corresponding BOM/VST wires using crimp connectors. See figure 4.

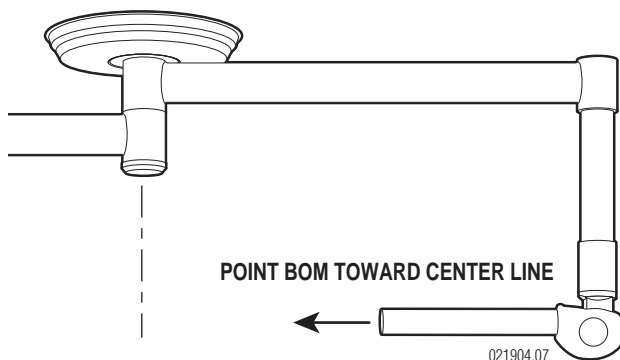
c. Insert the vertical support tube into the radial arm receptacle. Observe any screw color codes, apply Loc-Tite to screw threads, and secure the BOM/VST assembly with the 5mm mounting screws. Repeat procedure for any remaining BOM/VST assemblies.



**Figure 4. VST to RAA Installation**

#### 4. Lighthead

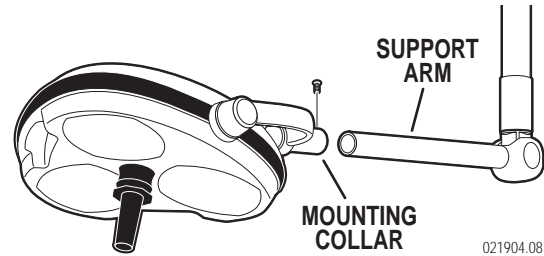
a. To make it easier to install the lighthead, locate the support arm of the balance mechanism so that it points inward toward the ceiling cover. This will prevent the radial arm from moving when installing the lighthead. See figure 5.



**Figure 5.**

b. Remove the four (4) screws from the lighthead mounting stub.

c. Install the lighthead mounting stub into the support arm and secure with the screws previously removed. See figure 6.



**Figure 6. Lighthead Installation**

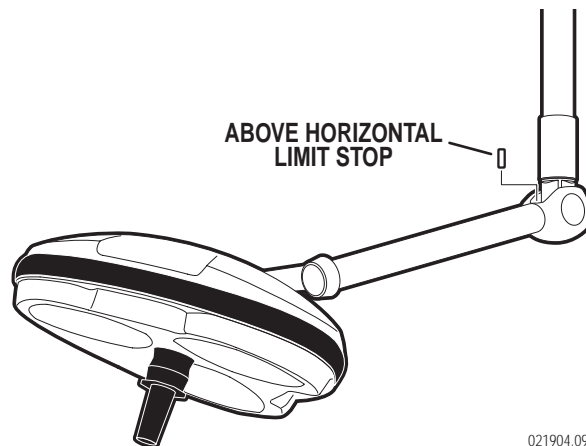
d. Pull the lighthead down and remove the Above Horizontal Limit Stops from the BOM. See figure 7.



**WARNING**



**DO NOT** remove lighthead when support arm is in down position; The balance mechanism will be severely damaged and may result in bodily injury.



**Figure 7. Above Horizontal Limit Stops**



## Output Voltage Adjustment

a. Remove the top cover using the following procedure: See figure 8.

1. Carefully move trim strip for access to the corner plate screws and remove the (3) top screws.

2. Using a 1/8" straight blade screwdriver, release the (4) lock tabs and remove the top cover.

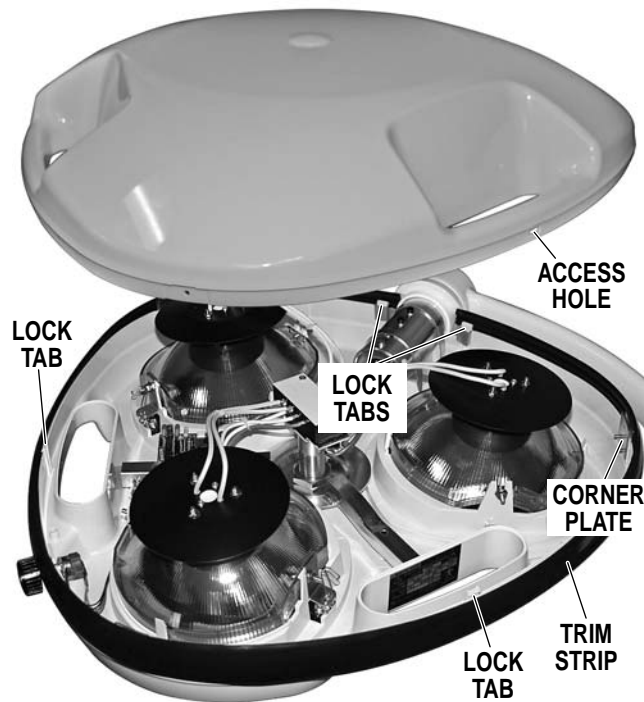


Figure 8. Top Cover Removal

b. Test bulb voltage at the terminal strip. Turn main power "ON" and set the Dimmer Control to maximum intensity for the test. Output voltage (at the terminals) should be  $20V \pm 0.2V$ . See figure 9.



CAUTION



The internal circuitry used in the Stellar system requires the use of a **true RMS type digital voltmeter** to accurately set the bulb voltage. Premature bulb failure will result from incorrect voltage.

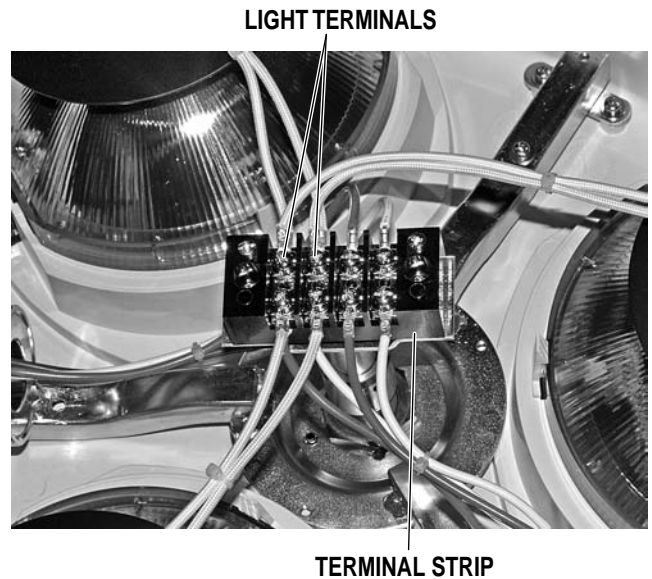


Figure 9. Bulb Voltage Test

c. Adjust the voltage to the lighthouse by turning the adjuster on the lighthouse circuit board. See figure 10.

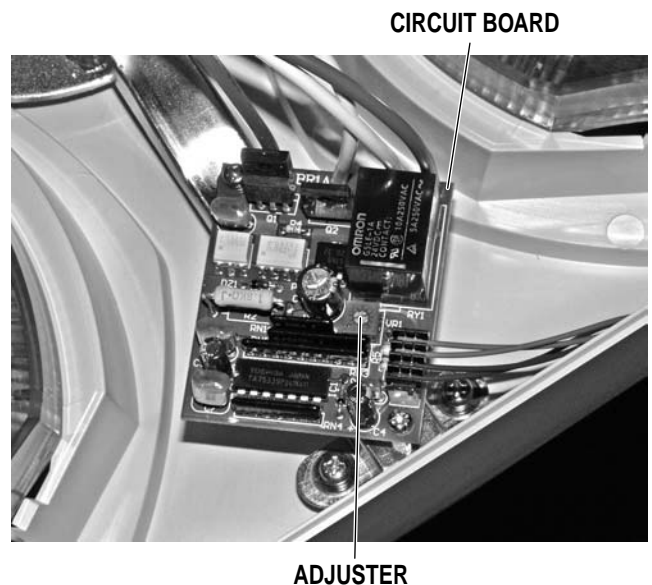
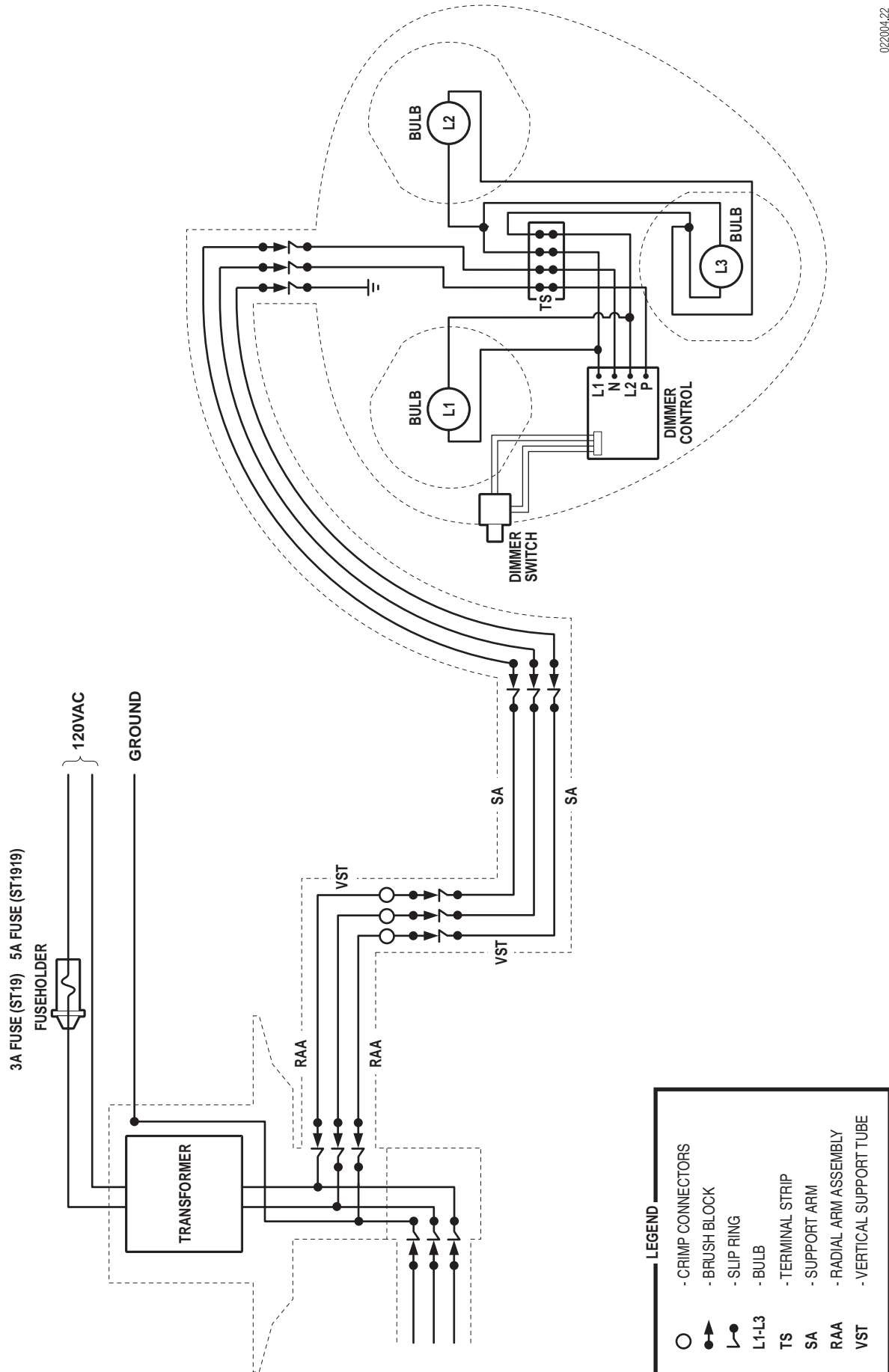


Figure 10. Voltage Adjustment

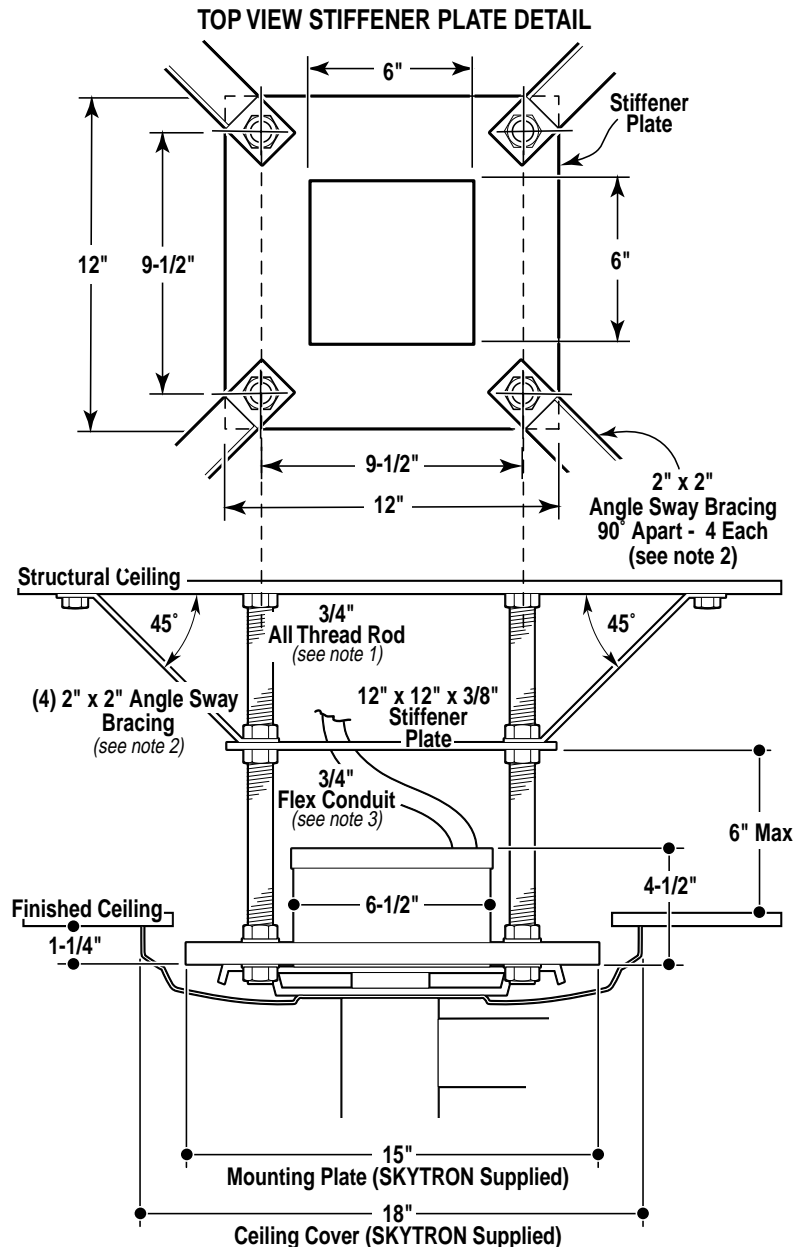
d. Turn the adjuster clockwise to increase the output voltage, counterclockwise to decrease the voltage.

e. Install top cover and secure with the (3) screws removed from the corner plates. Do not overtighten screws.

# WIRING DIAGRAM ST1919



022004.22



Contact SKYTRON representative for Seismic calculations if applicable.

#### MOUNTING STRUCTURE GUIDELINE



5000 36th Street S.E. • Grand Rapids, MI 49512  
1.800.SKYTRON • 1.616.957.0500 • FAX 1.616.957.5053

## DAMAGED SHIPMENT CLAIM PROCEDURE

Whenever a shipment suffers damage while in the custody of the transportation company, the responsibility lies with the transportation company, and the value of the damages can be collected from the transportation company if the proper procedures are followed.

When a shipment is received in a damaged condition and due to the appearance of the containers such as a broken crate, torn wrapping, or smashed carton, the contents may have been damaged. That fact should be noted on the Bill of Lading offered by the transportation company. An example of an applicable statement would be; "Received in good order except as noted" or "Crate damaged, possibility of concealed damage." The addition of these types of statements on the shipping documents will automatically give grounds for starting a claim.

If damage cannot be identified on the exterior of the container, but is found when the container is opened, further unpacking should be stopped immediately and the container with all wrapping or packing materials should be held. The transportation company should be notified so an inspector can be sent. Failure to follow either of these two procedures may result in an inability to file a claim and collect for damage done. Returning the container to the sender without such an inspection may prevent filing a claim, because it will divide the responsibility for damage and in many cases the transportation company will return the shipment to the sender without charge after the inspection.

The claim itself may be filed by either the shipper or consignee, but the consignee must notify the transportation company and the shipper that the damage has occurred. Remember that refusal of the shipment or failure to note the possibility of damage on the shipping documents may jeopardize the claim. Also, acceptance of a damaged shipment which has been processed properly to allow for filing a claim, will not jeopardize the position of the consignee. In any case, SKYTRON will see that damage which is not the fault of the consignee or his agents is corrected, if the transportation company does not honor the claim, as long as SKYTRON receives the full cooperation of the consignee in filing the claim.

Some of the papers needed for filing a claim are in the hands of the consignee after the shipment has been received. If SKYTRON must file a claim, we will request these papers by name from the consignee at such time as the claim is under discussion. We will require the originals of these papers and not copies.

Knowledge of the procedures outlined above and your cooperation in submitting damaged shipment claims will help both you, our customer, and SKYTRON by assuring the integrity of our products from manufacturing to installation.

## INSTALLATION CHECK LIST

### Mounting Structure:

Fabrication of structure correct \_\_\_\_\_  
Mounting plate set and level \_\_\_\_\_

### Wall Control:

Wiring proper gauge \_\_\_\_\_  
Wire connections correct \_\_\_\_\_  
Cover screws installed \_\_\_\_\_  
Input voltage checked and \_\_\_\_\_  
adjusted as necessary \_\_\_\_\_

### Radial Arm Assembly:

Mounting bolts installed & tightened \_\_\_\_\_  
Wiring properly connected & \_\_\_\_\_  
assembly grounded \_\_\_\_\_  
Ceiling cover installed \_\_\_\_\_

### Miscellaneous:

Diffuser assemblies clean \_\_\_\_\_  
Clean fixture with cleaning solution \_\_\_\_\_

### Vertical Support Tubes:

All BOM/VST's installed and 6 mm \_\_\_\_\_  
mounting screws Loc-tited \_\_\_\_\_

### Lighthead:

Mounting stub screws installed \_\_\_\_\_  
Bulb Voltage checked \_\_\_\_\_  
Power ON, all bulbs illuminated \_\_\_\_\_  
Bulbs remain illuminated throughout:  
•RAA rotation \_\_\_\_\_  
•BOM rotation \_\_\_\_\_  
•Pitch axis \_\_\_\_\_  
•Roll axis \_\_\_\_\_  
•Vertical travel \_\_\_\_\_  
Center positioning handle mounted \_\_\_\_\_







5000 36th Street S.E. • Grand Rapids, MI 49512  
1.800.SKYTRON • 1.616.957.0500 • FAX 1.616.957.5053